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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,854	12/22/2003	Kunitake Matsushita	31647-5	9104

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EXAMINER

MULLINS, BURTON S

ART UNIT PAPER NUMBER

2834

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,854

Applicant(s)

MATSUSHITA ET AL.

Examiner

Burton S. Mullins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,7,8,11 and 12 is/are rejected.
- 7) ☒ Claim(s) 2,4-6,9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Recitation "a thrust spring adapted to press the one end of the shaft by a rotatable ball" is indefinite. Does this mean the spring presses the shaft end against the ball? Or that the spring presses the ball against the shaft end?

Claim Rejections - 35 USC § 103

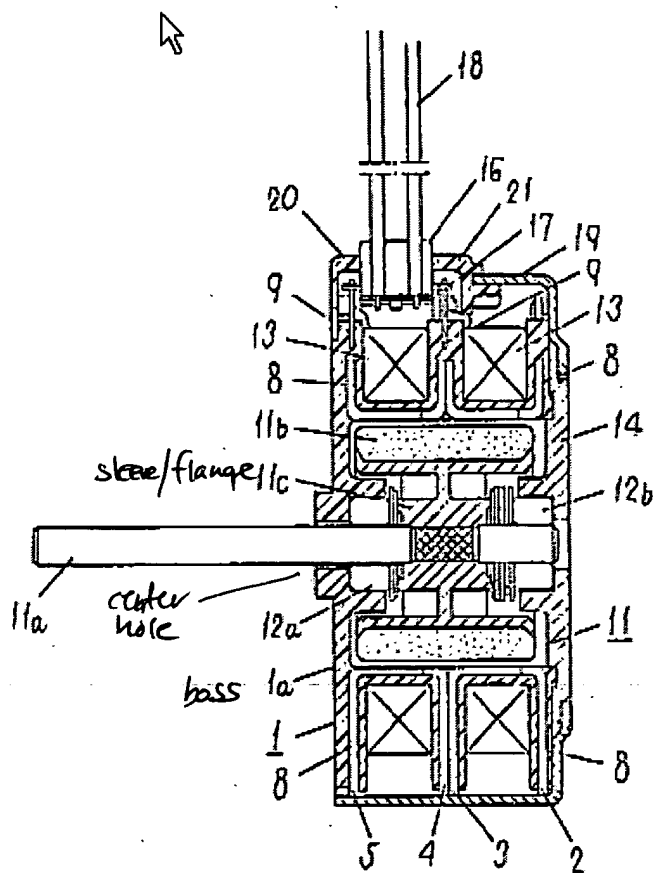
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 7 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiba et al. (US 4,714,850) in view of Tanaka (US 4,015,154). With reference to the marked Figure 2 below, Akiba teaches a stepping motor comprising: a rotor 11 including a shaft 11a and a magnet 11b surrounding a portion of the shaft (Fig.2); a stator 1 surrounding the magnet of the rotor with a gap therebetween (not numbered, Fig.2), and adapted to generate a magnetic field thereby causing the rotor to rotate around an axis of the shaft (inherent); a rotor sleeve 11c having a cylindrical portion (not numbered, Fig.2) and a flange (not numbered, Fig.2) provided at one end of the cylindrical portion, the rotor sleeve 11c being provided between the magnet 11b and the shaft 11a so as to fixedly hold the magnet and the shaft together (Fig.2); a boss (holding

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part) 1a having a circular shape with a center hole (not numbered; Fig.2) for allowing the shaft 11a to rotatably pass therethrough and being formed (by monolithic resin molding) with the stator 1 (c.3, lines 37-51) so as to oppose the flange of the rotor sleeve (Fig.2); and a bearing 12a rotatably disposed between the boss and flange of the rotor sleeve (Fig.2).

Fig.2.

Akiba does not teach ball bearings, per se, for the bearing 12a.

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Tanaka teaches a molded motor including a boss molded with the stator (Fig.5) and further including a concave portion 22a for receiving a ball bearing which rotatably supports the rotor shaft 4 (c.6, lines 5-10).

It would have been obvious to provide ball bearings per Tanaka as the bearings of since the ball bearings would have been desirable to support the rotor shaft.

Regarding claim 7, Akiba's rotor sleeve 11c is resin (c.3, line 55); therefore, it is "formed by resin-molding such that the resin is filled between the magnet and the shaft and cured".

Regarding claim 11, the boss is resin-molded integrally with the stator in Akiba (c.3, lines 37-51).

4. Claim 3, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiba and Tanaka as applied to claim 1 above, further in view of Nagata et al. (JP 07-075322). Akiba and Tanaka substantially teach applicant's invention but do not specifically teach a thrust spring.

Nagata teaches a thrust spring 16 for reducing shaft vibration (Figs.1&3).

It would have been obvious to provide a thrust spring per Nagata on the motor of Akiba and Tanaka to reduce shaft vibration.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiba and Tanaka as applied to claim 1 above, further in view of Lee (US 6,208,046). Neither Akiba nor Tanaka teach a spiral ridge on the exposed portion of the shaft.

Lee teaches a stepping motor with a lead screw 22 with spiral ridges formed on an exposed portion of shaft 20 (Fig.3). When the rotating shaft is actuated by the stator coils, the

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lead screw enables a pick-up unit to axially reciprocate along the lead screw (c.1, lines 15-23; c.7, lines 1-5).

It would have been obvious to modify Akiba and Tanaka and provide a lead screw per Lee since this would have been desirable to allow a pick-up unit to axially reciprocate.

Allowable Subject Matter

6. Claims 2, 4-6 and 9-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach the claimed motor including: an inner surface of the boss beveled to form a conical configuration with a diameter increasing from the center hole of the boss (claim 2); plural partitioning protrusions formed on the flange (claim 4); plural partitioning protrusions formed on an inner surface of the boss (claim 5); the other end of the shaft rotatably supported by a sleeve bearing (claim 6); or the spiral ridge formed of resin (claim 9).

Response to Arguments

7. Applicant's arguments have been considered but are moot in view of the new grounds of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
20 April 2005